

Leucozonia ponderosa, a New Fascioliid Gastropod from Brazil

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ABSTRACT

A new species of fascioliid gastropod, *Leucozonia ponderosa*, is described. The new species is apparently endemic to Trindade Island, which is located 1140 km east of the Brazilian mainland. This large, thick-shelled species is characterized by three spiral rows of tubercles, three basal cords on the last whorl, and a distinct labral tooth. Like other described and undescribed Trindade endemics, *L. ponderosa* appears to be derived from a western Atlantic ancestor.

INTRODUCTION

The fascioliid genus *Leucozonia* is a tropical American and eastern Atlantic group of shallow-water predators. In the course of a review of the species of this genus, we have discovered a distinct, unnamed species that appears to be endemic to Trindade Island, Brazil. Here we introduce this new species as *Leucozonia ponderosa*, and comment briefly on the western Atlantic affinities of this and other Trindade endemics. Abbreviations used are: MNHN, Muséum national d'Histoire naturelle, Paris, France; MORG, Museu Oceanográfico, Fundação Universidade do Rio Grande, Rio Grande, Brazil.

SYSTEMATICS

Family Fascioliidae Gray, 1853

Genus *Leucozonia* Gray, 1847

Type species: *Murex nassa* Gmelin, 1791, by original designation.

Leucozonia ponderosa new species
(Figures 1–4)

Leucozonia nassa (Gmelin, 1791).—Leal, 1991, p. 157, pl. 20, figs. B, C (in part).

Diagnosis: A *Leucozonia* with five or six primary spiral cords on the last whorl, the adapical three rows being sculptured by low, rounded tubercles; distinct labral tooth present at end of third cord.

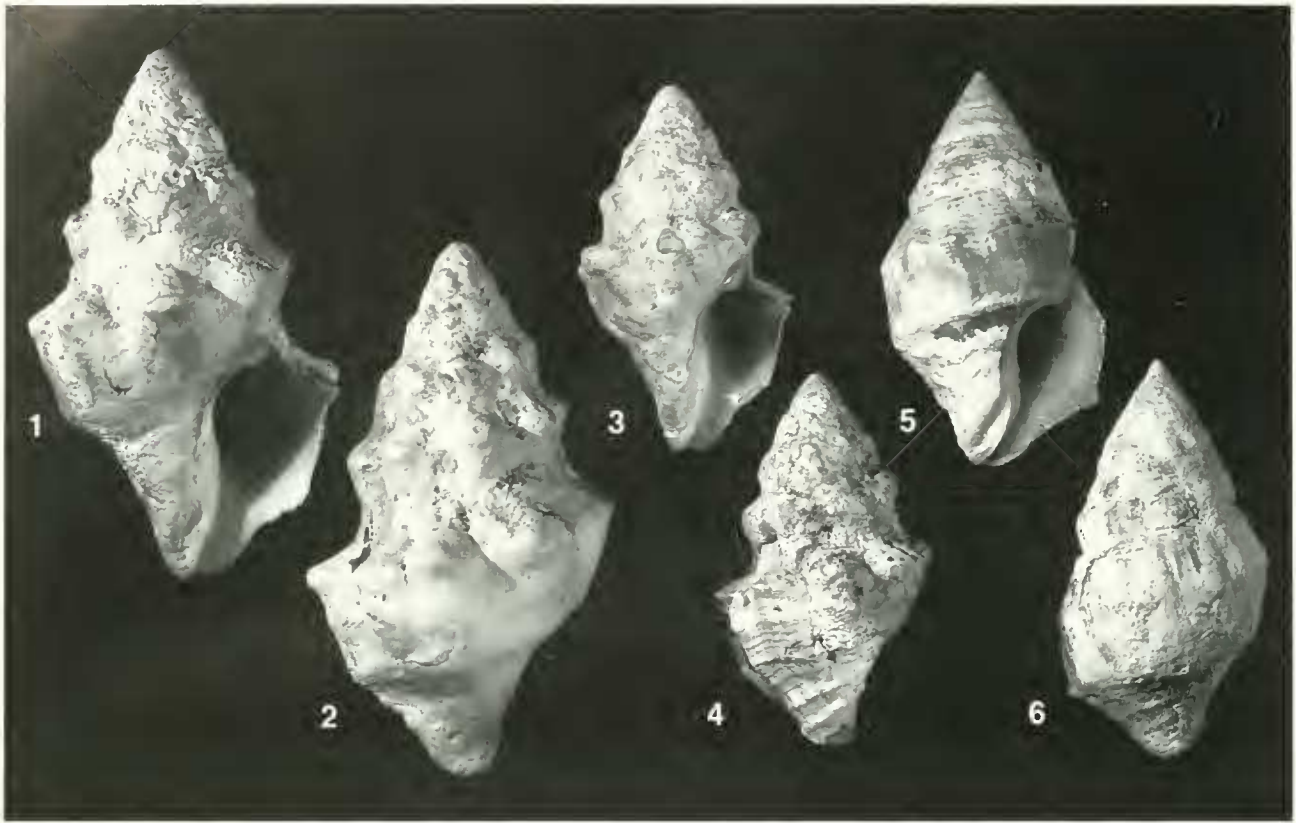
Description: Shell large (maximum length 67 mm), moderately squat (length:width 1.56–1.72), moderately high-spired (last whorl length:length 0.53–0.59), heavy and solid. Color light-brown. Spiral sculpture of last whorl consisting of six (sometimes five) cords, one at shoulder, a second below the shoulder, and a third central, and three (sometimes two) basal cords, all separated by fine threads. Axial sculpture of last whorl consisting of eight strong, rounded ribs, forming low, rounded nodes where they are crossed by each of the three adapical spiral cords. Outer lip with distinct adapical sinus, convex medial sector, and weakly concave abapical sinus. Third spiral cord ending in well-developed labral tooth. Adaxial side of outer lip with 11–12 strong, beaded lirae. Aperture relatively broad (aperture length:aperture width 2.4–2.7), color light-peach. Siphonal fasciole well developed; umbilical slit absent. Siphonal canal relatively long (siphonal canal length:aperture length 0.38–0.42).

Type locality: Enseada dos Portugueses, Trindade Island, Brazil, 20°30'S, 29°20'W, depth 10 m, rocky bottom.

Type material: Holotype, MORG 39298, length 47.3 mm, width 28.8 mm, aperture length 28.0 mm, aperture width 10.5 mm, siphonal canal length 11 mm; Paratype 1, MORG 39299, length 66.8 mm, width 40.0 mm, aperture length 35.5 mm, aperture width 14.2 mm, siphonal canal length 15 mm; Paratype 2, MNHN, length 62.8 mm, width 36.6 mm, aperture length 35.7 mm, aperture width 15.1 mm, siphonal canal length 15 mm, collected by J. H. Leal and P. Bouchet, SCUBA, 10 m, 22 May 1987 (all from type locality).

DISCUSSION

Two species of *Leucozonia* occur on Trindade Island. One of these is a thick-shelled, obsoletely spirally sculptured form of the widespread western Atlantic species *Leucozonia nassa* (Gmelin, 1791) (figures 5–6). This form, which also occurs at Fernando de Noronha Ar-



Figures 1–2. *Leucozonia ponderosa* new species, Trindade Island, Brazil, length 66.8 mm, paratype 1, MORG 39299 **Figures 3–4.** *Leucozonia ponderosa*, Trindade Island, Brazil, length 47.3 mm, holotype, MORG 39298. **Figures 5–6.** *Leucozonia nassa*, Trindade Island, Brazil, length 52.1 mm, MNHN unnumbered, Enseada dos Portugueses, Trindade Island, Brazil, J. H. Leal and P. Bouchet, SCUBA, 10 m depth, 22 May 1987.

chipelago, Atol das Rocas, and Bahia (all in Brazil), is characterized by spiral sculpture consisting of weak threads or sometimes very weak spiral cords. If cords are present, they number six or seven from the shoulder to the central, tooth-bearing cord. The single specimen we have seen from Trindade has a dark-peach colored aperture and strongly granulated lirae on the adaxial side of the outer lip. The second species from Trindade, which we distinguish as the new species *L. ponderosa*, is characterized by three distinct, nodose adapical spiral cords, one at the shoulder, a central cord that bears the labral tooth, and a cord between these two. In addition to these adapical cords, there are three (sometimes two) major cords below the tooth-bearing cord. The aperture is of a light-peach color, and the lirae on the adaxial side of the outer lip are weakly beaded.

Some specimens of *L. nassa* from Curaçao and elsewhere in the southern and eastern Caribbean superficially resemble *L. ponderosa* in having three nodose adapical cords, but they differ from *L. ponderosa* in having the two adapical cords so close together that the shoulder appears to have a double keel. In *L. ponderosa*, the second row of nodes lies farther from the shoulder. Moreover, the aperture of Caribbean specimens of *L. nassa* is white instead of peach-colored.

Two other species of *Leucozonia* have three adapical cords sculptured by nodes or tubercles. *L. triserialis* (Lamarck, 1822) from the Cape Verde Islands differs from *L. ponderosa* in having a much more tuberculate shell, one basal cord instead of three, and a white instead of a peach-colored aperture. *L. tuberculata* (Broderip, 1833) from the Galápagos and Cocos Islands in the eastern Pacific differs from *L. ponderosa* by having two instead of the usual three basal cords, by being smaller in size, and by having a white aperture. Moreover, the third (tooth-bearing) cord of *L. tuberculata* is not nodose, whereas that of *L. ponderosa* bears nodes.

BIOGEOGRAPHY OF TRINDADE

Trindade Island, located 1140 km east of the Brazilian mainland at 20°30' S, 29°20' W, is a small (4.8 km in length), high island in the South Atlantic. Its gastropod fauna was first systematically studied by Leal (1991). Species in the island's fauna that are not endemic are widely distributed in the tropical western Atlantic. Leal (1991) reported that about 16% of the gastropod species in the fauna of Trindade are endemics. Thus far, only two of these, the lottiid *Patelloida marcusii* (Righi, 1966) and the neritid *Nerita ascensionis trindadensis* Vermeij,

1970, have been described. Both species also occur at Martin Vaz, a tiny archipelago 48 km east of Trindade (Leal, 1991). In addition, Leal (1991) reports unnamed species endemic to Trindade in the genera *Diodora*, *Calliostoma*, *Solariella*, *Arenic*, *Melanella*, *Nassarius*, *Anachis*, *Vexillum*, *Granulina*, *Fenimorea*, and *Kurtziella*.

As Leal (1991) pointed out, the endemic species all belong to western Atlantic clades. We may surmise that they arose as isolated propagules from populations occupying the seamounts and banks extending from Trindade westward to Vitória on the Brazilian mainland. In the case of *Leucozonia*, the initial dispersal event would probably not have involved transport by ocean currents, because eggs in this genus hatch into crawling benthic juveniles (Bandel, 1976; Leal, 1991). *Leucozonia ponderosa* does not appear to occur at Martin Vaz. Whether this absence is the consequence of inadequate sampling or of a failure to disperse remains unclear.

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